UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/562,922	12/29/2005	Kinzo Kishida	P1211US	8584

1218   7590   09/29/2008
CASELLA & HESPOS
274 MADISON AVENUE
NEW YORK, NY 10016

EXAMINER
NGHIEM, MICHAEL P

ART UNIT	PAPER NUMBER
2863	

MAIL DATE	DELIVERY MODE
09/29/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	10/562,922	KISHIDA ET AL.
	Examiner	Art Unit	
	MICHAEL P. NGHIEM	2863	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,10-16 and 21-24* is/are rejected.

7)☒ Claim(s) *6-9 and 17-20* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 December 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date *12-29-05*.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

The disclosure is objected to because of the following informalities: the markings (clean version of specification, page 38, lines 13, 17) should be removed.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1 and 2, the phrase "or the like" (line 2) renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "or the like"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).

The following limitations lack antecedent basis:

- claim 2, "which" (line 10); "the input" (line 11).

- claims 7, 8, "the substantially same point" (line 4).

- claims 10, 21, "the same point" (last line).

- claims 17, 18, "the substantially same point" (line 3).

The remaining claims are also rejected under 35 U.S.C. 112, second paragraph, for

being dependent upon a rejected base claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5, 11, 12, 14-16, 22, and 23 are rejected under 35 U.S.C. 102(b) as being

anticipated by Masazumi et al. (JP 2002-340741, see English Translation).

Regarding claims 1 and 2, Masazumi et al. discloses a structure monitor system (Fig.

1) for analyzing a distortion or a like physical quantity at a specified point of a structure

(storage tank, Problem To Be Solved, lines 3-4; Fig. 1), in which the physical quantity

at one point on a boundary of the structure (Solution, lines 1-5) or inside of the

structure (Solution, line 17) is expressed by a governing equation (paragraph 14), by a

numerical analysis method by setting a specific boundary condition (paragraph 0014),

and monitoring the structure based on the analysis result (paragraph 0014, lines 7-8),

comprising:

a measuring means (7) for, using an optical fiber sensor (4, 5) laid on the

boundary of the structure (Fig. 1), measuring physical quantities of the structure at

points on the boundary of the structure where the optical fiber sensor is laid (Solution,

lines 1-7),

a numerically analyzing means (8) for calculating the physical quantity at the

specified point of the structure by the numerical analysis method using the measured

physical quantities by the measuring means as the boundary condition (Solution, lines

7-17), and

a display means (9) for displaying information on the analyzed physical quantity

by the numerical analyzing means in relation to the position of the structure (Figs. 2-3).

Regarding claim 2, Masazumi et al. further discloses the numerically analyzing means

for deriving physical quantities at points on the boundary of the structure where the

optical fiber sensor is not laid (estimated parameter, Solution, lines 9-12; predicted

value, Solution, line 17), which physical quantities are converted for the input as the

boundary condition (e.g., side plate periphery, paragraph 0014, lines 3-4), from the

governing equation using the measured physical quantities by the measuring means

(paragraph 0014), and calculating an analyzed physical quantity at a specified point of

the structure (e.g. calculating petroleum level height, paragraph 0014, line 1) by the

numerical analysis method using at least either the derived physical quantities or the

measured physical quantities on the boundary as the boundary condition (paragraph

0014).

Regarding claims 3 and 14, even though Masazumi et al. does not explicitly disclose a

notifying means for giving a notification <u>if the analyzed physical quantity by the numerically</u>

<u>analyzing means exceeds a predetermined physical quantity</u>, this is an optional limitation

suggested by the "if" clause.

Regarding claims 4 and 15, Masazumi et al. discloses the optical fiber sensor is laid on

the outer surface of the structure (Solution, lines 1-5).

Regarding claims 5 and 16, Masazumi et al. discloses the numerically analyzing

means calculates the analyzed physical quantity using a boundary element method as

the numerical analysis method (calculation using finite element method, paragraph

0014).

Regarding claims 11 and 22, Masazumi et al. discloses the optical fiber sensor also

serves as the confirmation measuring means (optical fibers 4-6).

Regarding claims 12 and 23, Masazumi et al. discloses the display means is provided

separately from the numerically analyzing means and is connected with the numerically

analyzing means via a communication means (communication means between display

9 and computer of 8) for transmitting and receiving information (Fig. 1).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

Claims 3, 10, 14, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Masazumi et al..

Regarding claims 10 and 21, Masazumi et al. discloses the measuring means includes

a confirmation measuring means (portion of optical fiber that is laid over structure,

Solution, lines 1-5) laid at an arbitrary position of the structure for measuring physical

quantities at points of the laid position of the confirmation measuring means (Solution,

lines 1-5), the numerically analyzing means (8) calculates the analyzed physical

quantities at the points where the physical quantity is measured by the confirmation

measuring means (Solution, lines 7-17).

However, Masazumi et al. does not disclose:

- claims 3 and 14, a notifying means for giving a notification if the analyzed physical

quantity by the numerically analyzing means exceeds a predetermined physical

quantity.

- claims 10 and 21, the display means displays information on the comparison of the

measured physical quantity and the analyzed physical quantity at the same point.

Nevertheless, Masazumi et al. discloses the numerically analyzing means being a

computer (8). The computer has a display means (9). Masazumi et al. discloses the

analyzed physical quantity by the numerically analyzing means exceeds a

predetermined physical quantity (see angle of inclination, 23 degrees vs. 13 degrees,

paragraph 0024). It is common knowledge to provide the computer with a notifying

means such as an emailing means or a printing means for the purpose of reporting a

test or analyzed data to a user.

Furthermore, Masazumi et al. discloses the comparison of the measured physical

quantity and the analyzed physical quantity at the same point (paragraph 0014, lines 7-

8). It would be obvious to use the display means (9) to convey a test or analyzed data

to a user.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide a notifying means and displaying the result of comparison of the measured physical quantity and the analyzed physical quantity at the same point for the purpose of reporting/conveying test or analyzed data to a user.

Claims 13 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masazumi et al. in view of Jaeger et al. (US 4,650,281).

Masazumi et al. discloses the all of the claimed limitations as discussed above except the optical fiber sensor is coated with a magnetically distortable member that is deformed according to a magnetic force.

Nevertheless, Jaeger et al. discloses an optical fiber sensor is coated with a magnetically distortable member that is deformed according to a magnetic force (column 1, lines 10-17).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide Masazumi et al. with the optical fiber sensor being coated with a magnetically distortable member as disclosed by Jaeger et al. for the purpose of improving the sensing capability of the optical sensors (column 1, lines 24-30).

Allowable Subject Matter

Claims 6-9 and 17-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Reasons For Allowance

The **combination** as claimed wherein a structure monitor system comprising the numerically analyzing means divides the structure into two areas partly overlapping each other; calculates physical quantities at points in an overlapping area of the two areas by a boundary element method while calculating an analyzed physical quantity at a point in one area; and calculates an analyzed physical quantity at a point in the other area by a finite element method using the analyzed physical quantities in the overlapping area (claims 6, 19) or comparing the assumed distortion and a measured distortion at the reference point and executing calculation according to an optimization method to identify the position and shape of the crack (claims 7, 17) or comparing the assumed temperature and a measured temperature at the reference point and executing calculation according to an optimization method to identify the position and shape of the abnormally high temperature part (claims 8, 18) or the numerically analyzing means calculates the analyzed physical quantity by approximating the boundary condition on an infinite boundary to zero in the case of analyzing a specified point in the structure having the infinite boundary sufficiently distant from the specified

point to be analyzed by the numerically analyzing means to make the boundary

condition ignorable (claims 9, 20) is not disclosed, suggested, or made obvious by the

prior art of record.

Contact Information

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Michael Nghiem whose telephone number is (571) 272-

2277. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, John Barlow can be reached on (571) 272-2269. The fax phone number for

the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

/Michael P. Nghiem/

Primary Examiner, GAU 2863

September 23, 2008